Table of contents

SAFETY

Water

1. Do not use Aqua Cam in water 5M deep or more or for longer than 30 minutes.
2. Avoid using Aqua Cam in hot spring or hot water more than 40°C (104°F)
3. Pour water in a container, immerse Aqua Cam for 5 min or so and clean salt, sand, etc. by shaking Aqua Cam or pressing the buttons in water.
4. Do not let water or sand enter Aqua Cam when port cover is open. It may cause trouble Aqua Cam. Do not open or close port cover with wet or sandy hands. Open port cover after drying your hands thoroughly.
5. Do not let foreign materials such as sand, hair, dust, etc. captured in the water-proof packing.
6. Water may leak into Aqua Cam if port cover is not closed tight. The warranty is not applicable to damage caused by water leakage.
7. Ensure that port cover is closed thoroughly before using Aqua Cam. Water leakage may be caused.
8. Do not open port case while using Aqua Cam waterside.
9. Images taken in water using Aqua Cam may not be clearer than normal images, but it is not a trouble.
10. Aqua Cam does not float in water.

After using Aqua Cam

1. It is recommended to wash Aqua Cam withfresh water within 60 minutes after using it.
2. When contaminated by chemicals (thinner, benzene, alcohol, disposable towel, insect repellent, sunscreen, insecticide, etc.) including detergent, soap, oil, etc, immediately wipe off with dry cloth.
3. Immediately wash off with clean water after using Aqua Cam in sea water. Corrosion or deformation of the product may be caused.
4. Even small foreign materials may cause water leakage. Make sure that there is no defect in the water-proof packing.
5. Do not clean Aqua Cam with a sharp object. Scratch on the waterproof packing and O-ring contact surface may cause water leakage.
6. Carefully check there is any sand, hair, salt, dust, threads, dirt, etc. on the O-ring. If found, be sure to sipe off with a soft cloth or tissue paper.
7. Be careful not to leave any cloth or tissue pater fibers on the O-ring after cleaning it
8. Check the O-ring for cracks, skewing, distortion, fine splitting, scratches, embedded sand, etc. Replace O-ring if you find any of these.
9. Check the O-ring contact surface on Aqua Cam in the same way

O-ring

1. Aqua Cam port cover uses an O-ring to maintain its waterproof.
2. O-ring maintenance is very important. Failure to do O-ring maintenance may lead to water leaks
3. The serviceable life of the O-ring variens with frequency of use of the port cover and conditions. Generally, it is about one year.

Storage

1. Do not expose Aqua Cam to direct sunlight or heating instruments. Do not leave it inside a parked vehicle in the summer season.
2. Do not use the product near fire (Do not put it in an electric oven.)
3. When port cover is open and closed in a cold place like ski ground, snow or water drop got into the operating parts such as port cover, button, microphone etc. may be frozen, leading to improper operation of Aqua Cam.
4. Do not store or use Aqua Cam in very hot, humid spaces such as sauna room, etc.
5. Do not have behaviors such as dismantling, compression, penetration, etc.

Temperature

1. Aqua Cam temperature rise while using it for a long time.
2. Quality of image may be degraded as Action Cam temperature rises.
3. It is recommended to leave for 10 minutes or longer until Aqua Cam inside temperature to decrease to safe level.
4. The exterior surface of Aqua Cam may get hot but it is not a melfunction.
5. When Aqua Cam temperature reaches 70 ℃, Aqua Cam power automatically turns off for the safety.
6. Battery lifetime may be reduced at temperature range 0∼−10 ℃.

Others

1. Aqua Cam design, specification and operation manual are subject to change without prior notice.
2. Figures in the user's manual may look different from the actual Aqua Cam.
3. Audio and video of Aqua Cam is subject to being affected by electromagnetic radiation at specific frequencies.
4. This wireless equipment may cause radio interference and should not provide any service associated with safety of human life.
5. Use only the accessories (charger, holder, etc.) from the specified vendors.
6. This product has passed through the drop test at 1.5m above a polywood plate of 5cm in thickness. However, this does not guarantee damage free, fault free and water proof performance under all situations.

BASIC PACKAGE BUNDLE ITEMS

❶ Aqua Cam

❸ Handlebar Mount/Adhesive Mount

❸ User's Manual

❹ Warranty Certificate

❺ Charging port cover

★ A fixed form

☞ Like the picture above, Aqua cam is tied using Handlebar Mount /
Adhesive Mount at the place where you want to set.

☞ This product is not being used as "Portable device",
instead be used as fixed position.

★ Replacing the PORT COVER

Bundle provides a charging port cover for water resistance environment
☞ To be water resistance, you must use 'Duran USB cable'

☞ You can remove the port cover by laterally inserting a sharp pin or pen into the micro SD card slot.

Portable port cover

Charging port cover
(Water resistant)

★ Closing the PORT COVER

If the port cover is not closed tight, water leakage may be caused.

1. Insert the projected part marked with arrow into the body (Figure 1,2).
2. Press the upper part to fix the port cover (Figure 3).

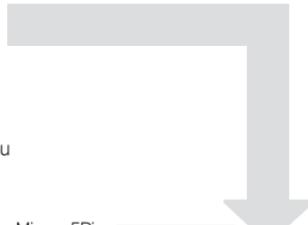(1)   (2)   (3)

BUTTON DESCRIPTION

Recording Start / Stop / Select / Power ON,OFF(Press hold)

Moving cursor / Move to Detail setting menu
(Press hold)

Micro−HDMI out jack
(not inchide)

Micro−5Pin
(USB) jack

Micro−SDcard insertion slot
(not inchide)

Reset button

CHARGING BATTERY

★ Battery

The red LED flashes when the camera battery goes down below 10%.
If the battery is discharged during recording, the video will be stored and the power will go off.

★ Auto Power Off

The power will automatically turn off if operation is temporarily stopped for more than 5 minutes.
This function is not available in the following situation
– Shooting movie or photo
– Application control is being connected
– While data and image is being transferred
– HDMI connection is being made

★ Charging the battery

1. Connect Aqua Cam to the computer or AC/DC adaptor with the micro usb cable (AC/DC adaptor is not included)
2. The LED lamp lights up in red.
3. The LED turns off when the battery is fully charged.
4. If you do not intend to use Aqua Cam for a period, charge Aqua Cam every 3 to 6 months
☞ : Sometimes In order to protect the life of the battery AQUA CAM goes into Trickle charge mode, this mode is not turned off LED lamp after Charging completed, so in this case, stop charging.

★ Charging time

Via AC charger : Approx. 180 min.
Via a computer USB: Approx. 270 min.

★ Recordable time

Approximate time available when you use a fully charged battery (Units: minutes)
Continuous recording time(Mode:FHD) – 130

SD CARDS

★ Inserting micro SD card

1. Open port cover (Portable or Charging)
2. Insert micro SD card in the correct direction until it clicks.
3. Close port cover (Portable or Charging)

★ To eject micro SD card

1. Open port cover (portable or Charging)
2. Slighly push micro SD card
3. Close port cover (Portable or Charging)

★ Recordable time

Estimated recording time of movie (Units: minutes)

Memory capacity		8GB	16GB	32GB
MODE	FHD	95	200	290

Make sure a micro SD card has been inserted before using Aqua Cam
4GB, 8GB, 16GB and 32GB Micro SD cards are available.

❚ Recommendation: It is recommended to use a micro SD card of Class4 or faster, 4GB~32GB Sandisk, Samsung or Transcend.

RECORDING, CAPTURE

1) VIDEO RECORDING

OPERATION	DISPLAY
1. Place the cursor on ![REC] then press the Recording (Select) button. 2. Video recording starts with the icon blinking. 3. If you want to finish recording, press the Recording (Select) button again.	![display]

NOTE

BEEP : Start Recording-Twice short / Finish Recording-Once long
LED: The purple LED flashes during recording

2) PHOTO CAPTURE

OPERATION	DISPLAY
1. Place the cursor on ![camera] then press the Recording (Select) button. 2. Photo capturing starts with the icon blinking.	![display]

NOTE

BEEP : Twice short
LED : The purple LED blinks twice short during photo capturing.

3) WI-FI ON/OFF

OPERATION	DISPLAY
1. Place the cursor on ![wifi] then press the Recording (Select) button. 2. WI-FI ON ![wifi] WI-FI OFF ![wifi off]	![display]

NOTE

Indicator shows strength of WI-FI signal in real time on center of the display panel
1. When the signal is strong, indicator shows 4 bars
2. When the signal is weak, indicator shows dot

SETTING

1) VIDEO

OPERATION	DISPLAY
1. Press and hold moving curser more than 2 seconds to move setting mode 2. Place the cursor on ![REC] then press the Recording (Select) button. 3. Press moving curser to move to right mode 4. Press Recording (Select) button to select setting (Resolution, Mode, File delete) 5. When complete select, press and hold moving curser more than 2 seconds to competePress moving curser to move to right mode	MENU REC ⌂ ▼ ✱ ⓘ 99% HOLD ⓜ :MENU

Resolution	FHD 30FPS (1920x1080 16:9) HD 30FPS, 60FPS (1280x720 16:9), WVGA 120FPS (840x480 16:9)	Mode	Manual Time lapse 1/3/5 sec Single 1/5/10/30 min Multi 1/5/10/30 min

NOTE

Time lapse: Video is captured and stored by the specified second (not supported by WVGA 120FPS.)
Single: Recording automatically stops after a specified time
Multi: Continue to create recording files with a specified length until recording finishes
Loop recording: Keep recording by deleting the oldest file when the micro SD card memory is full (files are created by one minute)
(Loop recording is allowed only in VIDEO/MANUAL mode)

File Delete

OPERATION	DISPLAY
1. Place the cursor on a file to be deleted. 2. Check by pressing the Recording (Select) button 3. Press and hold M button more than 2 seconds to confirm delete 4. Delete confirm pop-up on display	DELETE 0100MJH00027 0100MJH00016 0100MJH00005 OK ⓞ MOVE ⓜ

2) PHOTO

OPERATION	DISPLAY
1. Place the cursor on ⬛ and press the Recording (Select) button. 2. Select Detail setting (Resolution, Mode, Image quality, File delete)	MENU 🔋 📷⬛☰⚙️ℹ️ 99% HOLD M :MENU

NOTE

LED: LED on for each shot

BEEP : Sounds on for each shot

Resolution	2304x1296 (16x9)	Mode	Manual Time lapse 1/3/5/10/30 sec Burst shot	Image quality	Super fine Fine Normal

NOTE

Time lapse: Photo is taken by the specified seconds interval

Burst shot: Continuous 10 shots a second

File delete: Same as Video file delete

3) WI-FI ON/OFF

OPERATION	DISPLAY
1. Place the cursor on ☰ and press the Recording (Select) button. 2. WI-FI ON ☰ , WI-FI OFF ⦸	MENU 🔋 📷⬛☰⚙️ℹ️ 99% HOLD M :MENU

NOTE

Real time display depending on signal strength

Same as the WI-FI function of MAIN.

4) SET UP

OPERATION	DISPLAY
1. Place the cursor on ✖ and press the Recording (Select) button.	MENU
2. Configuration change (Language, Up/Down reverse, LED, BEEP, WHITE BALANCE, Time, MIC, Format, Factory set, Subtitle, Loop recording)	REC ◯ ▽ ✖ ❶
	99% HOLD ▥ :MENU

Set up

Language: English (to be supported)

Up/Down reverse: Use for mounting Aqua Cam reversed

LED: ON/OFF

BEEP: ON/OFF

WHITE BALANCE : Camera setting to produce natural colors based on different light conditions such as outdoor or indoor light

Options: AUTO, DAYLIGHT, CLOUD, TUNGSTEN mode

Time: Aqua Cam time setting

Mic.: ON/OFF

Format: Delete all files in the SD CARD

Factory set: Reset all settings

NOTE
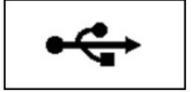
Default settings: Video-FHD30/Manual, Photo -SFINE/Manual

LED-ON, MIC-ON, White Balance-AUTO, Up/Down Reserve-OFF, BEEP-ON, Loop recording -OFF

5) INFORMATION

OPERATION	DISPLAY
1. Place the cursor on ❶ and press the Recording (Select) button.	MENU
2. Software version, MAC information	REC ◯ ▽ ✖ ❶
	99% HOLD ▥ :MENU

TRANSFERRING FILES

OPERATION	DISPLAY
1. Connect the Aqua-Cam to your computer using USB cable. 2. Check that USB connection is displayed on the LCD screen. 3. File location: Removable storage (SD CARD)-)DCIM folder -)100MEDIA-)Video (100VIDEO), Photo (100PHOTO)	

NOTE

Loop recording file location: Removable storage (SD CARD)-)LOOP folder -)100MEDIA-)Video (100VIDEO), Photo (100PHOTO) File name: LOOP####

HDMI TV OUT

OPERATION	DISPLAY
1. Connect Aqua Cam to TV using the micro HDMI cable. 2. Check that the HDMI icon is automatically displayed on the LCD. 3. You can play video/photo through TV.	HDMI

	Video, photo List screen		Video, photo Play screen	
Button Operation after connecting TV	M' button	Recording (Select) button	M' button	Recording (Select) button
	Press short – Move the list forward Press hold – Move to the photo folder and the video folder	Press short – Move the list backward Press hold – Play photo and video	Press hold – Wind backward Press short – Wind forward	Recording (Select) button Press short – Halt/Play Press hold – Finish

You can view the video/photo list of loop recording by connecting HDMI from SETTING -) SET UP -) LOOP RECORDING -) ON.

You can purchase micro HDMI cable separately.

APPLICATION

You can download applications from the APP Store and the Play store (key word: Duran)

Connection

1. Turn on the Aqua-Cam.
2. Connect to the Wi-Fi signal (initial name: Duran####/ password: 1234567890) of Aqua-Cam on a smart phone.
   ☞ You can change Wi-Fi password at 'Detail setting' of application.
3. Run the application.
4. In the event of automatic connection fail, click the Camera icon to retry connection.
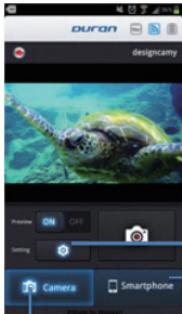
Auto connection

Connection fail

Connection success

Key functions

1. Preview ON/OFF, recording, photo, video(You can view a preview and recording at the same time)☞except time-lapse mode or resolution WVGA
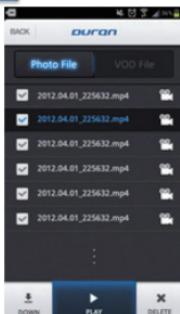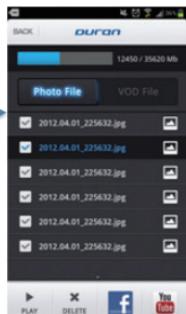
2. Quick mode change: Quick change among favorite modes (video-manual, photo-manual, burst shot, time-lapse photo)

Detail setting

BACK	DURON	
Cam Camera		
Name		Design abc
Version		Ver 0.12
Wifi Network		
Name		Design abc
Version		Ver 0.12
Video Setting		
Video Resolution		HD30 >
Frame Rate		60 >
Mode		Single >
Loop Recording		ON >
Photo Setting		
Photo Resolution		Fine >
Mode		Manual >
Setup		
Language		ON >
Up/Down		ON >
LED		ON >
Beep		ON >
About		>
SNS Login		
Facebook		ON
Youtube		OFF
File Setting		
Delete Last File		OK
Delete All Files From SD Card		OK
Factory Set		OK
Time		2013.03.15 13:25 >
Camera Suatus		
Battery Level		56% >

3. Download and play video and photo in a smart phone

4. SNS upload and play video and photo files from a smart phone

FIRMWARE UPGRADE

OPERATION	DISPLAY
1. Download the update file from the website and store it in the Micro SD card. 2. Insert the SD card into the camera. 3. Update is automatically performed when entering 'MENU' →) 'INFORMATION'. 4. You can view the update progress state on the LCD display.	UPGRADING OK ⏻ MOVE M

NOTE

You can also upgrade firmware by importing the firmware file with the camera and computer connected through USB without removing the SD card.

After update the first time in about 20 seconds boot time is required due to optimization (with BEEP sound). After optimizing please restart AQUA CAM

Website :http://www.duran.co.kr

SPECIFICATION

CPU	A5S(Ambarella)
Video Resolution	Full HD real-time recording
	1080p, 30fps
	720p, 30fps
	720p, 60fps
	WVGA, 120fps
Photo Resolution	Resolution 2304 x 1296 (Super Fine, Fine, Normal)
C-MOS Sensor	AR0330 (1/3" CMOS Sensor 3.5-mega pixel)
LENS	FULL HD LENS -. Image plan : 16.5mm, "Composition : 1GM+5G+IRCF, F NO : f 2.0
Angle of view	D : 140, H : 108, V : 80(Degree)
OS	RTOS
Operating Voltage	DC 3.7V
Power	DC 5V
Cable	Water Proof Continuous Power Supply Cable(Self- development)
Extenal memory	MicroSD/4G~32G
Internal Microphone	Voice recording
Video format	H.264 compression recording, saves as MP4 format
Audio format	PCM(MONO)
Photo format	JPEG
Wi-Fi	Wi-Fi, Preview on APP
White Balance	WB3100 / WB5100 Calibration
Battery	1340mAh Rechargeable li-ion battery
Display	OLED(Dot Matrix:128×64)
Wi-Fi Module	IEEE 802.11 b/g ATHEROS
Application	Wi-Fi connect, Preview on APP (IOS, Android)
	Multilateral lauguage
Water Proof	IPX 7 - 5m (without case)
Setting	LED On/Off, Beep On/Off, LCD display, Upside down
Update	By SD card
Size	36X84X33 , 110g

TROUBLE SHOOTING

Problem/Situation	Remediation/Solution
Cannot turn on Aqua Cam. The power turns off suddenly.	Bettery pack is weak or depleted. Check battery indicator level and recharge the battery pack Depanding on Aqua Cam temperature, the power may turn off automatically The power will automatically turn off if operation is temporarily stopped for more than 5 minutes.
Cannot take video/photo.	1.Memory is full. Delete some unnecessary videos/photos or insert a new SD card. 2.Power is off. Press the [Power Button] to turn on.
The camera is frozen	Press the reset button to reboot. (there is a reset button below SD Card slot)
The date imprinted on the photo is incorrect	Set the date and time in the [set up] menu
Why do some of my indoor photo blurry and dark?	1. Poor lighting. Take photo in better lighting. 2. The camera extends photo exposure time under low light/indoor condition. Keep the camera (and the target subject) steady when take photo. 3. Place the camera on a flat and steady surface, or use a tripod when take photo.
The color of the video/photo is not natural	Select the proper white balance option to match the light source.
Transmission stops due to static electricity or magnetic interference while sending data (data transmission fail)	Restart the application program or reconnect the communication cable (USB).
No button works	Press the Reset key to restart.
If the Wi–Fi password is lost	Select 'Factory set' then password is 1234567890 ('SETTING' –)'SET UP' –) 'Factory set')
Computer doesn not recognize Aqua Cam	Turn on Aqua Cam and connect to computer When the battery level is low, charge the camera
The lens gets fogged	Moisture condensation has occurred. Turn off Aqua Cam and wait about an hour for the moisture to evaporate
The date or time is incorrect	Set the date and time again

WARRANTY

1. Warranty against maker's defects is 1 year for Aqua-Cam and 6 months for accessories. The product will be exchanged with a new product in case of defect of the whole product and accessories will be provided in case of defects of accessories.

2. The vendor is not responsible for failure, accident, loss, etc. resulting from user's fault or negligence other than defects of the product.

3. The warranty is not applicable to any products purchased second hand or imported through abnormal distribution channels.

4. The warranty is not applicable to water leakage resulting from drop or impact.

5. The vendor is not responsible for data (video or photo) loss due to water leakage.

6. Water leakage may be caused if the port cover is not closed tight, and the vendor is not responsible for any loss incurred by this.

7. In case there is no supporting evidence of purchase date, the warranty period will be estimated based on serial number of the product.

8. If the seal is broken the products are not covered under warranty.

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rul es. The se limit s are de signed to pro vide r easonable prote ction again st harmful interference in a residential in stallation. This equi pment generates, use s and can radiate radio frequency en ergy and, if not inst alled and u sed i n accordance with the in structions, may cau se h armful interfe rence to radi o co mmunications. Ho wever, there is no g uarantee that interference will not o ccur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is con-nected.
• Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expre ssly approve d by the p arty respon sible for co mpliance could vo id the user 's authority to operate the equipment.

FCC Compliance Information : This device com plies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This devi ce may not cause har mful interferen ce, and (2) this device mu st accept any interference received, including interference that may cause undesired operation

IMPORTANT NOTE:
FCC RF Radiation Exposure Statement:

This equi pment complie s with FCC RF radiation e xposure limit s set forth for an uncont rolled enviro nment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CALL CENTER

Phone support,
82-2-2105-0757

e-mail support,
Customer service department : go@duran.co.kr
Technical department : tech@duran.co.kr
Sales department : sale@duran.co.kr

Website,
http://www.duran.co.kr